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Earning and Saving.

Careful saving and money at interest together work wonders. No reason appears for doubting the account of the Connecticut farm hand, Patrick Mahaney, who is stated to have laid up \$5300 during thirty-two years hard work and close saving in the land of steady habits, his wages having never been above twelve dollars per month. Board and second-hand clothing were included. He used neither liquor nor tobacco, his only weakness having been a few cents spent for lemon candy. At the age of fifty-six he has returned to Ireland, where his frugal habits will enable him, in his simple way, to live well without work. His little competency had been laid away at wages which seem absurdly small to many workmen who handle four or five times as much money in a year, yet never so much as begin a bank account.

This farm hand's cash wages for the thirty-two years amounted to only about \$4500. How could he have saved over one-sixth more than he earned? By the seeming magic of compound interest. Money compounded at four per cent. doubles in sixteen or seventeen years. An average amount of \$2000 in the savings bank for seventeen years would amount to the sum alleged to have been saved. During the last few years, interest would have been much more than the wages.

Any one who will work and save may win a competency to retire on at the age when the heedless hand-to-mouth workman begins to wonder whether he may not become a town charge. Every dollar saved before a man is forty, becomes two or three dollars by the time he reaches an age when nature suggests to go more slowly and to rest by the way. An example like that of frugal Patrick Mahaney is of value, as an antidote to these feverish times of vain search for happiness through wasteful extravagance. It was well said in ancient times: "He is richest who wants least." Youth is the time to work and save. The result is health, simple tastes and money at interest as a staff for later years.

Extremes of saving exist, to be sure, and economy may go too far. But it is well to bear in mind that saving a competence depends more on will power and determination than upon the amount of money earned.

Early Housing of Stock.

We have come to the last week in October when our animals need increased attention. Very little can now be obtained out of doors. The season for pasturing is practically past, and while stock may be allowed to run during pleasant days, it should be housed at night or during cold or stormy days.

There is little gained in compelling animals to get their own living as long as the ground is bare and vegetation of little value. Animals should come to the barn in good condition. This will be a fine start toward carrying them through the winter, as they should not be allowed to grow poor or the young animals to remain stationary in growth during this long period of remaining at the barn.

There must be the food required for maintenance before any return can be expected, and then there should be sufficient in addition to produce good results at the fall or in the growth of young animals. And it should be remembered that generally it is the extra amount given that produces the best and most profitable results.

Here is a Bible maxim that will apply well in this case: "He that deviseth liberal things, by liberal things shall he stand." It will be found most convenient and best to have stables for all kinds of stock, where the animals can be kept and properly cared for.

The cattle, even to last spring's calves, should have separate stalls where they can be fastened.

Each will then have its place, and will be more certain of obtaining its share of the feed than when several are kept in one apartment or pen. There also will be less waste in feeding. Feeding stock out of doors is usually a wasteful practice, and allowing or compelling animals to remain out a good share of the day in winter should not be permitted. A short time out each day if the weather is favorable is well enough, but every farmer will notice that where there are good stables the animals prefer to remain in them to being out of doors.

It is Oct. 19 as I write and we are getting the first real touch of fall weather after that which has been unusually warm and pleasant for weeks. It is mid-afternoon and the cows are waiting to be admitted to the stable and their evening meal.

Of course cows that are kept in the stable nights early in autumn should be well bedded to keep them comfortable and clean. Where this is done all through the winter, it will require considerable material for the purpose. On our own farm no straw is fed, but all is required for bedding all of the animals, horses, hogs and cattle. As there is a power and utter in the barn, the straw is cut for bedding the cows. It is more conveniently used in this condition, does not require so much for bedding, and makes better handling of the manure.

E. R. TOWLE.
Franklin County, Vt., Oct. 28.

Keeping Bees.

It is a source of wonderment that more of our farmers do not keep at least a few swarms of bees. Around them on all sides blossom fields of clover, the pastures are gilded with golden rod and the woods studded with basswood.

Unlike other stock, bees require no special pasturage. They forage upon what which is unavailable to everything else.

Should you broach the subject of bee-keeping to a group of farmers, nine out of every ten would tell you that his father or grandfather used to keep bees, and that he could do anything he chose with them, and would probably conclude by telling you that he had often thought of keeping a few swarms himself, but had never begun. Now there must be a cause. Nearly every one keeps his hives, and why should he not keep bees as well?

The plain facts are these: most people prefer to go without honey rather than run the "terrible risk" of being stung by bees. There are those to whom a bee sting is especially painful, but for the ordinary person the scare is more serious than the hurt. Even the oldest and most experienced beekeepers do not find the sharp-pointed "tail of a bee," an instrument of pleasure. However, the hurt is only momentary, and has no lasting effects.

The daily papers of our large cities have done as much or more than any other agency to discourage the bee-keeping industry. Frequently our eye will be attracted by such a headline as this: "Killed by Bees," or "Severely Bitten by Bees." The column usually goes on to state that Mr. Brown was working with his bees when they viciously set upon him, biting him furiously. Now to a bee man such trash is amusing, to say the least, even although the victim of the "biting" may have found it otherwise. Bees do not bite. They are incapable of even puncturing the skin of a mature grape, and though they are often accused of injuring fruit, they are powerless to do so unless the skin of the fruit has been previously broken by birds, wasps, or other agencies, in which case bees will suck the juice.

Bees require less care than most farm stock, and a few swarms can be successfully cared for at odd hours, thus seemingly taking no real outlay of time. Who is there that is not fond of their delicious sweets? And yet so few produce it.

The first step is to get some book on bees; read it, and read it carefully. Then get some bees and go in easily. Do not think that the knowledge of bee-keeping is to come as a dream, yet a sufficient knowledge may be obtained by reading to enable one to begin, and after that experience is as good a guide as can be had.

It may resemble plunging into chilly water, but when once in, the worst is over. The bee is shorn of its terror, and instead of regarding it as a buzzing, whirling demon bent on its pain-dispensing mission, it naturally enough becomes a part of the stock as much as hens or sheep. Try it! Bee-keepers, please don't smile. This article is intended for non bee-keepers, not for you.
B. E. GOODNOUGH.
Danville, Vt.

A Busy Garden Farm.

Market gardens located near large cities usually depend quite largely on crops grown under glass. The land is cultivated on an extensive system because of its extremely high value by the acre, and the crops are sold to city dealers. But a market garden like the one described in this article, located twenty miles or more from the largest cities of the section, would naturally be conducted on somewhat different lines.

The well-known farm of C. E. and G. B. Coolidge, Middlesex County, Mass., comprises about 150 acres, devoted almost wholly to vegetables, for which a market is found in the towns and small cities of the vicinity. These smaller markets, which are usually neglected by the average market gardener, are found to be an excellent outlet for the products of this place, and during the past fifteen years a business of fifteen to twenty thousand dollars per year has been built up without interference with business of other market gardeners.

That the dealers in the small towns appreciate a regular supply of good vegetables may be judged from the illustration, which shows the farm teams loaded up and ready to start out to supply the trade. While the amount sold in any one town is comparatively small, the total reaches a larger amount, and the prices average fully as well as when the produce is taken to Boston or other large markets. In small markets prices do not reach extreme figures, sometimes noted in large cities, while on the other hand, periods of glut and extreme low prices seldom occur, so that the average reaches a fair amount, and the trade is considered more reliable. The Coolidge Brothers find, however, that hothouse products, such as tomatoes, cucumbers and carnations, are still sold to best advantage through the commission dealers of large cities.

The farm crops include the usual varie-

ties of vegetables; early cabbages have been a specialty for years. They thrive on rather moist, heavy land, which includes a large part of the farm, and have never failed to produce a profitable yield. The Jersey Wakefield, of a specially selected strain, is the favorite variety. Celery is another crop which does exceedingly well, and usually follows early vegetables, such as peas, potatoes and string beans. These crops nearly always succeed on account of the thorough methods employed and the aid of abundant water supply. The water comes from a small artificial pond, and is pumped through a series of large and small pipes of iron, from which it is distributed through hose over at least fifty acres of the farm. Some of the soil is light and feels the drought severely unless irrigated, and nearly all parts of the farm need water at certain times of the year in dry seasons. Much of the continued success of the crops is owing to the abundant supply of manure, which is sent

two forms of rake, and a good hand in a productive bog with them can harvest seventy-five to eighty measures of berries in a day, each measure holding six quarts. As this is about double the amount that a smart hand picker would get, it not only cheapens the cost of harvesting, but shortens the time, so that the grower can wait longer before he begins to harvest, and be more sure of getting them in before they are frost bitten. As a rule, the pickers are paid by the measure, and as the meadow is divided by lines and each picker takes a division or strip across, it is easy to see that all are picking the fruit clean.

Naturally many broken stalks, leaves and defective berries come in when picked this way, and winnowing machines are used to take out such as can be blown away. Then they are placed in racks where they can be looked over before going to the barrel. The bulk of the crop is put in storage houses until the market demands it, which will be in from six weeks to three

take from this bulletin, and it may be instructive to some of those who have written inquiries to this office in regard to the prospect of the cranberry market for this year. "By an examination of the price lists of the New York market from 1870 to 1902 it is found that the prices of cranberries have varied widely in that time. The lowest ranges of prices quoted were in April, 1879, when the berries sold at \$3.50 to \$4 a barrel; November, 1880, \$4 to \$7.50; April, 1880, \$3.50 to \$5.50; November, 1886, and January, 1897, \$5 to \$5.50; April, 1897, \$3.50 to \$5 and November, 1901, \$6 to \$7. The highest prices noted were \$15 to \$16 a barrel in April, 1874; \$14 to \$15 in April, 1876; \$13 to \$13.50 in January, 1884; \$13 to \$14 in March, 1895, and \$10 to \$12 in January, 1903. No prices are accessible for 1880, 1881, 1882, 1884, 1885, 1887 and 1888. The usual price has been from \$7 to \$10 a barrel."

Celery Culture in Wisconsin.

The work of planting is done by hand. Many bright growers have attempted to perfect a machine that will take the place of human fingers, and the result of their toil and thought is a sharpened stick that any boy may whittle out of a broom handle. Even this aid is disdained by the husky Polish women, who do the work of the celery field. They take the bunches of green things that look like a handful of fancy plumage from a milliner's model hat and carefully separating them, make a hole for each in the black soil with the right forefinger and stamp the dirt lightly about it with the same tool of nature. This slow and tedious process must be continued row after row and acre by acre, until half the park-like reservation of 175 acres is dotted over with sprigs of green. Work opens on May day and continues until the seed for the winter crop, which has been planted under the April showers, has sent out other little stalks a couple of inches into the sunlight. By the middle of June the greater portion of the acreage has been covered, leaving only the planting of the last rows and the renewals to be given attention.

The wheat farmer would say it was all over but taking the money at the elevator, but the delatessen farmer knows his troubles, and the heavy drafts on his bank account have just begun. He can cut out the weeds between the rows with his cultivator, for the rows are 34 feet apart, but the weeds on the sides of the rows and between the plants, which stand from three to six inches distant from each other, must be pulled by the fingers of the same Polish women who planted the tiny seedlings. The weeds never cease growing and the Polish women never cease pulling until the harvest wind comes out of the north. If it were not for the Polish women there would be no celery crop, for their labor is invaluable to the grower, and could scarce be replaced at a price he could afford to pay. Their ages range from fifteen to eighty, grandmother and grandchild often working together in the same row. They are picturesque. Their native love for color finds expression in bright head and neckerchiefs, and the call of their gowns is expressive of taste, giving to the background of green the flavor of that old-world peasantry that furnished a motif to the genius of Millet.

These women draw sixty-five cents a day for their labor during the planting and weeding season, when the work is comparatively light, and they retain the European notion that there is always another day to come, and that nothing is in a hurry to such an extent that it at times requires strenuous argument to cause them to move rapidly, but in the harvest time the rate is a dollar, as a greater number are required, and they understand quite as clearly as do the labor leaders the law of supply and demand. Looking at a field in August is akin to considering an army of feather dusters on dress parade. There are few things more beautiful outside the great floral districts of California and Florida than the picture made by the thousands of waving plumes of green that respond to the faintest breeze and bow before the patter of the lightest raindrops.

Harvest is the hurry time in the boggy field, but with the early crop haste is made slowly. First in the order of operations is the process of bleaching, which requires two weeks to perfect, and may be done either by covering the rows from the sun with boards or by hilling them with earth to the height of the plant tops. When all of the stalks are white and break brittle to the touch, they are removed from the ground with potato forks, or, if it be late in the treatment of the winter crop, and rushing is demanded to escape a heavy freeze, a plow is called into service. But the plants are handled tenderly. Breaking means ruin. The stalks are gathered in the arms of the women and carried to the waiting trenches, each a foot deep by six inches wide, and some of them the length of a field, where they are packed tightly and then covered over with earth and liberal coatings of heavy straw. Lying twenty-five to fifty feet apart, at intervals of great convenience to the harvesters, they appear as winrows of hay in a meadow—but hay of a price that might well turn the head of a horse finding it in his manger.

The trench is the grower's only storage-house. Marketing his product is his easiest task. He kicks away the covering of straw, removes a little of the black earth, and carries the quantity needed for the filling of his day's orders to his wash house, which is usually an unpretentious shed near his home. Here the stalks are sorted and washed, and after the rejection of the spotted ones—for there are no "seconds" in the celery trade—the crisp plants are relieved of their masses of spriggy roots, tied into bunches of a dozen each and packed in boxes holding a half-dozen or a dozen bunches, the smaller lots selling at \$1 and the larger at \$2 in the commission houses,

or free on board to the tradesman of the territory covered by express orders. This is the early fall price. It advances during the season, and now stands at \$1.20 and \$2.40, or twenty cents a dozen. "With all its hardships," said a grower's sprightly wife, a woman whose buoyant bearing, clear complexion and shining eyes told of life away from the smoke and dirt of the city, "I would not trade it for a city career."—Milwaukee Sentinel.

Live Stock Notes.

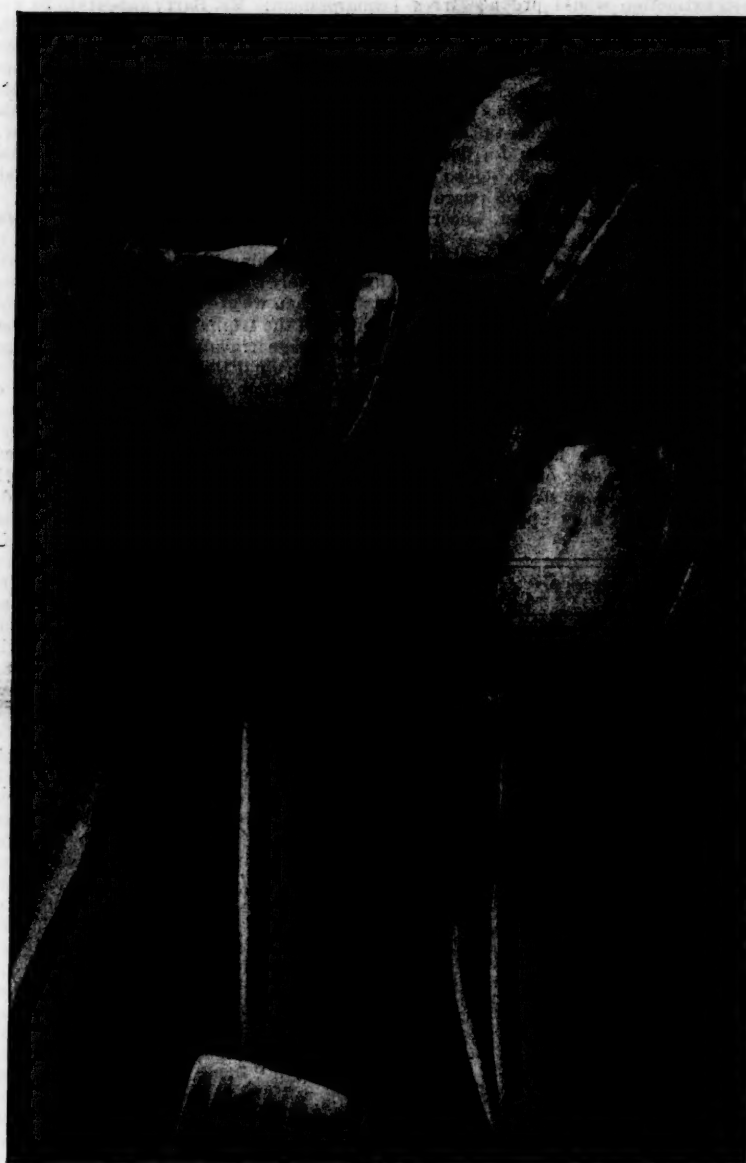
Sows from the last spring litter may very well be bred when eight months old, if they have been well cared for and kept making a thrifty growth. Some breed at six or seven months old, but it is not a good plan to breed them so young, as they have not attained full growth, and after they have bred they will not grow as well as before, but incline to take on fat more readily. Those that have farrowed before should not be bred again until the pigs are taken away, but this can usually be done at eight weeks old, and then as soon as the sow is beginning to gain well she can be bred, and her feed will go to the embryo instead of fattening her if it is what it should be. To breed her while the pigs are suckling robs either the present or the future litter of what it should have for proper nourishment. On the contrary, if she is left too long without breeding, the tendency to fill up with fat lessens the chance of her having a large litter or even of her breeding at all, and she will not have as much milk for her pigs when they are born. For this reason we have heard an experienced breeder say that he would allow his sows to have two litters a year even if he could not get anything for the fall pigs. But there is always a demand for them as roasting pigs if not for any other purpose. Both spring and fall litters are in better demand and bring better prices if they are early and have made a thrifty growth before they are sold.

We never have liked the idea of attempting to select one breed of hogs as a bacon breed because they had more lean meat than other breeds. Perhaps it is some defect in our education, but we think all such breeds, from the Southern Razor-back to the more improved Tamworth, require too much feeding and too long a period to make their growth in to be the profitable hog for the farmer who wants to convert his corn into meat, that he may have less pounds to draw to market to get the money he needs, and who also desires to know that his farm is increasing in fertility instead of becoming exhausted and run out. But when they talk about making good bacon pork by feeding more bran, middlings and alfalfa or clover and less corn, and thus building up muscle or lean meat instead of fat or lard, then it is another matter. Experiments made some years ago at the Massachusetts station showed that it was possible to raise pork in that way by a proper admixture of feeds that would contain as much lean meat as the bacon packers desire, and also to get the hogs ready for market as soon and as cheaply as though they had fed the lard hog on corn. But the experiments fell rather flat then because the packers in Boston would not pay as much for the bran-fed and clover-fed hogs as for those that had been corn fed. Whether they would do so now we do not know, but if they will, those who have to buy their grain feed would be willing to use more middlings and less corn, and the objections would only come from the corn-growing section where they would have to sell corn and buy other feed to replace it.

The fact that the sire is one-half the herd, or has as much to do in imprinting those traits that he inherits from his parents, is very well understood now among dairymen. Those who raise their calves which they expect or hope to take a place in their dairy a few years hence, are willing to pay a good price for the use of a bull of well-established dairy qualities such as they wish to perpetuate, whether to be for liberal production of milk, butter or beef. Those who care no more for the bull than to know that he is able to get the cow with calf are in the minority, and although they pay high prices for good cows to take the places of such as are superannated, they seldom make much money in the dairy business. They are comparatively few, we trust, but among those who keep sheep and swine we fear that those who are critical in regard to the animal they put at the head of the herd are but few. If the animal can get pigs or lambs they seem to think no more is needed. They expect by care and feeding to do the rest and to grow good lambs or hogs from anything that is dropped. They sometimes succeed in getting good animals in that way, but occasionally they make failures, and then they blame the season or the mother of the animal, although they have selected her with more care than they did its sire, and wonder why they should have such "bad luck." If they read of a farmer in one of the Western States who pays \$5000 for a boar, or half that amount for a ram that is from the best of selected stock, they wonder why men will be so foolish, and then they purchase another \$5 or perhaps \$15 animal to head their herds, and expect good results. And if what they raise and want to sell will not bring as much as the Western-bred animals, they feel that the buyers must be prejudiced.

If you put your whole manhood into the business, your farm will grow richer, your pocketbook fuller and your whole family happier.—R. W. Ellis, Somerset County, Me.

Mottles may be caused by over-ripe or over-heated cream, but in almost ninety-nine cases out of one hundred the cause is due to improper salting. I have yet to see at an exhibit a sample of unsalted butter that was mottled. William D. Baker, Quincy, N. H.



NEW TULIP "COTTAGE MAID."
Color, rose shaded with white. See page 5.

by the carload from Boston. There is a railroad station on the farm and a side track from the railroad line, which enables the cars to be unloaded right on the farm. In the same way cars can be loaded with vegetables for the city right in the fields where they are grown.

Although outdoor crops are the main reliance, yet the greenhouses considered by themselves comprise an important feature. They are heated by steam boilers, aggregating 100-horse power, and are used for growing cucumbers, lettuce, radishes and other common forcing crops. Carnations and other flowering plants are an important specialty. The soil in some of the greenhouses has been sterilized by heating in order to kill the insect pests and germs which cause various plant diseases. The sterilizer is a large box with a network of steam pipes inside. After passing through the sterilizer, a boxful at a time, the soil is free from sources of disease for at least a year. The greenhouses are supplied with liquid manure from large tanks in the boiler room. Commercial fertilizers and solid manures are also used. Part of the crops are grown on benches of earth under which are set rhubarb roots for forcing, thus growing the vegetables in two stories.

Cranberry Culture.

After planting the surface needs to be kept free from weeds, and this is usually done by pulling them by hand, as a hoe or horse implement would mix the sand and the soil beneath it. The meadow is also usually too soft to allow a horse on it. The flooding in winter prevents the plants from being heaved out by the action of the freezing, and also prevents early blooming which might be killed by the late frosts. While some flood for a short time after the fruit is formed to keep off certain insects, this plan is not recommended, as it sometimes does more injury than the insects would do. When the bog is flooded and covered with ice care is needed that water does not accumulate under the ice and raise it so as to lift the roots of the plants from the ground.

While formerly the picking was nearly always done by hand, and growers were prejudiced against the use of a cranberry rake, now nearly all use one or the other of

We give a table of past prices which we

Dairy.

Moderate Demand for Butter.

The supply of fresh butter is only moderate, but the stock of storage goods is very large and absorbs a part of the demand whenever the market advances. Hence the call for fresh dairy and creamery is only fairly active and not brisk enough to advance the price beyond a fraction of a cent on the upper grades.

The increasing reliance on cold storage tends to keep prices more nearly on an even basis than formerly. Extremely high or very low quotations now rarely occur. The supply of choice Northern dairy has been lighter this week, the cold weather having lessened the output or shipments. Pasture feed will be poor from now on and amounts to little. Box butter is in fair demand. Print goods are rather scarce and bring a full cent more than tub butter.

Chapin & Adams: "Usually at this season of the year butter advances in price, but the movement in this direction is at present very slight. The stock in storage is much larger than at this time last year, and any tendency of the market to advance brings out some of the storage stock and even down the quotations. Hence the outlook for high prices is not encouraging. The effect of the colder weather already appears in the slightly poorer quality of recent receipts of creamery butter. Usually the cold weather causes a lot of mottled butter, but not much trouble of this kind has yet been noticed."

The cheese market is quiet, with a small fractional decline noted in some lines. With the firm condition of butter markets cheese should maintain present quotations or advance. Most of the present offerings in Boston are Vermont and New York made. Not much Ohio and Wisconsin cheese is in sight.

Meeting of Milk Producers.

The milk situation was considered in all its relations at the milk producers' meeting in Boston, Thursday, Oct. 22. Discussion, however, hinged mainly on the questions of arbitration and the disposal of the surplus milk.

Finally, in case the contractors still refused to arbitrate, the directors of the union were instructed to insist on a flat price of 37 cents per quart can in Boston, the amount to be shipped at full price, not to be limited by last winter's production. In case the contractors refuse, the matter of beginning a strike and holding back the milk is to be referred at once to the local unions.

The outlook for arbitration is not considered promising. The contractors, through their spokesman, George O. Whiting, who was heard from by telephone, re-affirmed their decision not to submit the questions in dispute to the State board of arbitration.

The refusal, however, was not a downright "no," so the meeting by its instructions left a loophole by which the contractors may still agree to arbitrate if they choose. But in any event, declared the contractors, they would submit to arbitration on nothing but the price question, while the producers wish to overhaul the whole list of questions connected with the milk supply, especially the surplus price and the "zone system," by means of which the contractors deduct a charge for freight greatly in excess of its actual cost to them. There is some possibility that the contractors would agree to arbitrate before a committee of three, of which they should nominate one member and the producers another; these two members to appoint a third. But the producers are rather suspicious of this idea, and insist on the State board as the only body that would be regarded with general confidence. It is decidedly the impression of those directors of the union who have talked with the contractors that the latter have no intention of agreeing to arbitration, and the prospect of such a settlement appears slight.

The chance of a peaceable outcome thus rests mainly on a possibility of satisfactory agreement regarding the so-called "surplus." The temporary arrangement now in force calls for 39 cents per can, or 37 cents without the two cents allowed for carrying the general surplus. This price is all that the producers now ask.

The most serious difficulty hinges on the clause "amount limited to last winter's production and conditions." The excess, if any, sent by cash producers is being paid for at so-called "butter price," about 17 cents per can. Last winter the supply was very short, and many producers are making double the amount of milk they made the corresponding month last year. In such cases the "butter price" of the surplus would cut down their average for the whole amount to an unreasonable extent. This feature of the arrangement likewise offers great scope for the perverted ingenuity of the contractors. While some of them carry it out quite fairly, others make it an easy way to special forms of contract which include in substance some of the worst features of the old-time surplus clauses, and leave producers almost at the mercy of the dealers.

Sentiment at the meeting was strongly against anything like a return of the "surplus" clause. A flat price, it was said by many, must be insisted on above everything. Secretary Hunter warned the producers that this surplus arrangement was exactly what the contractors were most anxious to see restored in its former power.

The subject of strengthening the resources of the union was given considerable attention. Several members spoke their views regarding incorporation. One speaker, however, departed from the line followed by the others, and said that he believed that instead of incorporating the association it would be best to form a stock company. His plan was to have every member subscribe for at least a certain amount of the stock, and if any wanted to take more they would be at liberty to do so. This stock should not be assessable for more than its face value. The speaker said that he had devoted a summer to the study of the workings of the English system of co-operative business and that he had found it very satisfactory. He thought the producers should be able to say to the contractors, "We are in a position to market our own produce," and then they would receive better treatment. Evidently the idea is gaining ground of a closer form of organization of producers. It was also pointed out that better preparation should be made for critical times such as the present. The union should arrange so that cans, shipping facilities and selling arrangements can be provided in case of a milk war. Organizers should be sent to gather other producers into the union and to hurry out along the railroad lines in case of a strike and keep back the milk. For the present the local unions were urged to raise at least \$1 per member, in addition to membership dues.

Since the meeting there have been various conferences between officers of the union

and the dealers. The contractors were unwilling either to pay the straight price demanded or to submit the matters in dispute to the State board. Even to a board made up according to their own ideas they would submit no question other than that of the price. The matter has been referred to the local producers' union. At time of writing, the result had not been announced.

Agricultural.

Dried Blood as a Hog Food.

The latest reported experiment in use of meat food for swine is from the Nebraska station. Two lots of Berkshire-Tamworth cross-bred pigs were used in the test. One lot was fed ground wheat forty per cent, wheat middlings forty per cent, and ground maize twenty per cent. The other lot was fed a ration consisting of ground wheat forty per cent, wheat middlings thirty-five per cent, ground maize twenty per cent, and dried blood five per cent. The experiment was divided into two periods of six and eight weeks each.

During the first period the lot having no dried blood made an average gain of 1.01 pounds per day, and consumed 3.84 pounds of grain for each pound of gain, against 0.95 pound daily average and 4.10 pounds of grain for each pound of gain in the lot having the dried blood. During the second period, the lot having no dried blood made an average daily gain of 1.83 pounds, and consumed 4.68 pounds of grain for each pound of gain, against 1.55 pounds daily average gain, and 4.91 pounds of grain for each pound of gain in the other lot. In this test it will be seen that five per cent, dried blood added to the ration did not increase the gains from food consumed. This is to be attributed to the fact that all the lots had a mixed diet, viz.: lucerne pasture with forty per cent, wheat, thirty-five per cent, middlings and twenty per cent, maize, in addition to the five per cent, dried blood, which provided all the food nutrients required, with sufficient protein.

So far as one experiment with two lots of pigs can prove any question, it indicates that the mixed ration without the dried blood contains all the variety and all the protein or flesh-forming elements needed by pigs.

In experiments conducted elsewhere, where only dried blood was added to a maize ration, a marked increase in the economy of the gains resulted. These experiments would indicate that variety and a properly balanced ration are the chief factors in economical gains with growing pigs, and that dried blood is economical only when it is the cheapest method of supplying the protein to make a proper ration. C. G. F.

The Evils of Vivisection.

The Animals' Defender has an article on "Human Vivisection," which makes some astonishing revelations regarding an evil that may grow unless it is checked by some outspoken denunciation from prominent medical journals. It says that on Feb. 21, 1900, a hearing was given by a committee of the United States Senate to the advocates and opponents of a bill for the regulation of vivisection in the District of Columbia, and that Dr. Osier, the president of a medical college, in opposition to the measure, said, in referring to a pamphlet published by the American Humane Association, he desired to emphasize the fact that the sentiment of the medical profession strongly condemned the making of experiments upon patients like those recorded in the pamphlet, which were as repulsive to reputable physicians as the deep disgrace of an offending clergyman is repulsive to the cloth at large.

The Animals' Defender is of the opinion that this statement is not strictly correct, but whether it is right or wrong, it must be acknowledged that vivisection for scientific purposes has already gone too far, and that there are some doctors in apparently good standing who take no account of human suffering if they can make themselves famous by the discovery of new cures—thinking, no doubt, that the greatest good to the greatest number is desirable, though the individual withers during the work of research. The Animals' Defender calls special attention to a paper read before the New York Academy of Medicine on Dec. 1, 1887, by a doctor who had conceived the idea that the foot and mouth epidemic disorder, so fatal to certain animals, had a particular relation to scarlet fever; and that if human beings were inoculated with the virus it might render them immune to scarlet fever. This vivisectionist, in the paper referred to, described some of his own experiments, and the first person he operated upon was a little boy. He inoculated the lad with the virus of the foot and mouth disease, and then exposed him to the infection of scarlet fever, by placing over his mouth a pillow that had been used by a patient suffering from that disease. The theory of this doctor, by the way, has been long discredited, but even if it were correct, he had no excuse that we can see for his disgusting attempt to prove it true. This is only one recorded instance of the abuse of human vivisection, but it shows something of the spirit of the man who would peep and botanize upon his mother's grave.

A Few Bird Notes.

The great scarcity of song birds during the past summer has occasioned considerable comment, for, though these welcome visitors were plenty enough in the spring, they disappeared numerously as the warmer weather approached, and there are fewer of southward travelers among them than ever before at this season. The Springfield Republican is of the opinion that there has been this year extensive slaughter of song birds, and it holds the Italians responsible in a great measure for this wholesale killing, since they regard the birds as only desirable for cooking. It is said that Italy is almost a songless country, as far as the birds are concerned, because its inhabitants take this view and have no admiration for the music of nature, though they have sufficient appreciation of the music of art. The law is supposed to insure the safety of these birds, but it is apparently set aside almost with impunity, and the slayers usually laugh at the efforts of those who warn them that they will be fined for their murderous actions. This being the case, it is thought that the sentences usually imposed on the hunters indicated have been too light, and that a term of imprisonment might be more efficacious in preventing wholesale destruction. The man or boy with a gun under these conditions would be less audacious in his violation of law, and might, perhaps, less frequently shoot their companions in their ignorance of the correct use of fire-arms.

The Republican calls attention to the fact that much more depends upon the preservation of the birds than is generally ac-

knowledge, since "they are the only reliable check on the destructive multiplication of the insect horde." So it seems the birds are not only ornamental, but useful, and that their extinction would produce irreparable evils for the human race through the widespread ruin of fruit and grain, which could not be protected like the shade trees, by poison.

Many women, hereabouts, too, may be held responsible in a measure for the killing of birds, since they utilize them for decorative purposes, but those who do so are thoughtless and probably are not aware of the fact that in one place, at least, Lucerne, the women who wear birds on their hats are prosecuted. This is, to be sure, across the sea, where people are not supposed to be as enlightened as we are here in the land of the free. But the great responsibility for the slaughter of birds in this part of the country, at least, rests on the ignorant immigrants already mentioned and the native boys who are not under sufficient parental control, the former warring upon the birds to enrich their meagre larders, and the latter for the mere sport of killing. Both ought to be controlled by strenuous measures, for at present they apparently defy all authority.

Literature.

OVER THE BORDER. By Robert Barr. pp. 400. (Frederick A. Stokes Company.)
JOY AND POWER. By Henry van Dyke. pp. 75. (T. Y. Crowell & Co.)
COLONEL CARTER'S CHRISTMAS. By F. Hopkinson Smith. pp. 158. (Charles Scribner's Sons.)

CRITICAL ESSAYS. By Charles Lamb. pp. 338. (E. P. Dutton & Co.)
MEN AND WOMEN. By Robert Browning. pp. 312. (E. P. Dutton & Co.)
THE HOLY GRAIL. By Sebastian Evans. pp. 370. (E. P. Dutton & Co.)
A BUNCH OF KEYS. By Margaret Johnson. pp. 74. (E. P. Dutton & Co.)

ON THE ROAD TO ARCADY. By Mabel Nelson Thurston. pp. 222. (Fleming H. Revell Company.)
A FLAME OF FIRE. By Joseph Hooking. pp. 397. (Fleming H. Revell Company.)

THE DOOR IN THE BOOK. By Charles Barnard. pp. 197. (Fleming H. Revell Company.)
THE AWAKENING OF THE DUCHESSE. By Frances Charles. pp. 227. (Little, Brown & Co.)

THE STORY BOOK HOUSE. By Honor Walsh. pp. 320. (Dana Estes & Co.)
THE YEAR'S FESTIVALS. By Helen Phillips. pp. 270. (Dana Estes & Co.)
THE GIRL ROUGH RIDERS. By Col. Frontis Ingraham. pp. 310. (Dana, Estes & Co.)

John D. Barry has given a rather realistic picture of the eventful life of a member of the National House of Representatives in "The Congressman's Wife." It is the story of a promising statesman, who starts in his political career with the best intentions, but who is inevitably drawn into the meshes of an influential railroad corporation, whose servant he becomes while serving his country in the halls of legislation. In fact, Congressman Douglas Briggs, who is looked upon as one of the bright and shining lights in Congress, soon finds himself in the power of Franklin West, the wealthy representative of one corporation in question, and the money which enables him to entertain so lavishly in his new house in Washington comes from West, in return for valuable services which Briggs renders the big railroad company. With Briggs in his power, West makes love to Mrs. Briggs, and that is the turning point of the whole story. Mrs. Briggs is New England born and bred, the soul of honor and unwaveringly faithful to her husband, but when she learns from West's own lips that the money which they have been spending so liberally comes from him (West) and that her husband is practically in the power of this man, she makes life a burden for the congressman. The incident of West's love-making, out short by Mrs. Briggs' indignant rebuke, was, however, witnessed by a black-mailing female reporter who later published the story in a New York yellow journal, after endeavoring in vain to extort money from Congressman Briggs, then a candidate for re-election. The secret which Mrs. Briggs thought she held from her husband is at last out, and while the strained relations which have been existing between Congressman Briggs and his wife on account of her attitude regarding the source of his large income are not immediately dispelled, it is the beginning of the end. Briggs throws West out of his house. West threatens to defeat Briggs at the polls on election day. The congressman makes a half-hearted fight for another term, but is overwhelmed by the votes which the opposing candidate receives. There is nothing to do but to start life anew, and this he does with his wife's old-time love and sympathy. There are some lovely characters in the book, particularly that of Farley, the honest newspaper man in love with his profession—a striking contrast to the black-mailing female reporter. There are intimate glimpses of the actual life of a congressman—the private secretary at work,

the visits of politicians, the exciting scenes which mark the receipt of election returns at the congressman's home, and other incidents which occur in the life of the average congressman. Mr. Barry appears to be well informed on all the details, and into the story he has woven a romance in which the congressman's niece and his private secretary are the actors. Although not Mr. Barry's best work this is a sturdy tale, abounding in the portrayal of human nature, and a story which holds the interest to the close. [New York: The Smart Set Publishing Company. Price, \$1.50.]

In one of the old school readers there was a selection entitled "Eyes or No Eyes, or the Art of Seeing," in which was set forth impressively the importance of keen observation when we are on a journey, no matter how brief the trip may be. It is a fact that the average traveler abroad brings back comparatively little of value in the way of real information, although the accounts of his personal experiences may be interesting but trivial. Clifton Johnson, however, gives us a comprehensive, intelligent account of the lands which he visits. He is a keen, sympathetic observer, his descriptions are delightfully vivid, and he has the advantage of picturing with his camera the very things which he sees. We have already been given glimpses of rural Scotland by those charming writers, Barrie and MacLaren, but in their books the story was of prime importance. Mr. Johnson has visited Drumtochty and Thrums in his journeys through the "Land of Heather," and his pictures of Scotch life and character will delight the reader.

The Heather, he tells us, is omnipresent in Scotland to an unusual degree, and when in its glory the flowers are a delight to the eye. Its practical uses are many. Cottages are thatched with it, and it is used to handle for brooms and in bunches for scrubbing brushes. Mr. Johnson made his home with a shoemaker in the secluded hamlet of Drumtochty for several weeks, and in this village made famous by Ian MacLaren's "Beside the Bonnie Brier Bush," he discovered that the Drumtochty folk esteemed Dr. Watson a very clever man, but did not care much for his writings, aside from the interest stirred by their purely local flavor.

When the "Brier Bush" stories first appeared a United Presbyterian minister of the place, in his delight over them, read one of the most laughter-provoking chapters at a meeting of his elders. But the elders were perfectly imperturbable, and sat unmoved to the end. The minister did not repeat the experiment. The inhabitants of the place, in fact, saw nothing of story interest about the region or about themselves; and if truth be told, says Mr. Johnson, any visitor who goes there expecting something extraordinary will be disappointed! It is Dr. Watson's skill which supplies the deficiency. Johnson explored the town in every direction, and his word pictures of the houses, the inhabitants, the school, the coach which runs to Perth, the moor, the flowers and habits and customs of the people are described in a straightforward manner. Drumtochty and the country for miles around is owned by the Earl of Mansfield, although leased for a period of ninety-nine years, with about a quarter of this time still unexpired. The earl is unpopular because of his partisanship for the Established Kirk, but the dissenters have no fear that he will go against public sentiment and disturb them when the leases expire.

Mr. Johnson found that Thrums, the home of J. M. Barrie's famous characters, is a real place, and that it accords in many ways with Mr. Barrie's descriptions. Its name on the map is Kirremuir, located sixty miles north of Edinburgh. The industry that makes and supports the town is weaving, and the people appear neater and thriftier than those of the average Scotch town. At that particular cottage made famous by Barrie, Mr. Johnson found a black sign hung on the house walls bearing the words, "A Window in Thrums," and announcing souvenirs and lemonade for sale within. The working-class in Thrums have a poor opinion of the novelist's books, because nothing happens in the story but what they see every day. Mr. Johnson visited other parts of Scotland equally picturesque but less known, and his ramblings are always productive of real information with quiet humor and bright anecdote. The illustrations from photographs are superb, and the many little bits in the text are well drawn. [New York: The Macmillan Company. Price, \$2.00 net.]

The subject of these memoirs, George Eilers, was captain in the Twelfth Regiment of Foot (1777-1842), and the experiences of this English officer during his military career are amusing and gossip, without being remarkable for any important new light shed on the English social and political life of the period. As a young man Eilers went into the British army, spent several eventful years in India and returned to England, where he came in contact with many of the men and women of his day,



ITALIAN VILLAS AND THEIR GARDENS

BY EDITH WHARTON
WITH PICTURES IN COLOR
BY MAXFIELD PARRISH

A delightful feature of the new volume of THE CENTURY MAGAZINE is this series of articles, which will have a rare value to owners of country places. The combination of author and artist is an ideal one,—both have spent months in Italy in preparing the series, studying not only the well-known gardens, but procuring admission to many from which the public is excluded. ::

Illustrated in color. Begins in the
NOVEMBER CENTURY

who now occupy a niche in the British hall of fame. In his younger day he was a man of fashion, and, indeed, the colonel of his regiment was highly fastidious in all matters concerning his own personal appearance and those of the junior officers. Gambling and duelling were the principal diversions of the British officer in the Orient, but of British military achievements in India we obtain only slight information. One of Eiler's superior officers was, however, the future Duke of Wellington, and of him we are given a vivid pen-picture. "He was remarkably clean in his person," so the memoirs run, "and I have known him to shave twice in one day, which I believe was his constant practice. He spoke at this time remarkably quickly, with I think, a very slight lisp. He had very narrow jawbones, and there was a great peculiarity in his ear, which I never observed but in one other person, the late Lord Byron,—the lobe of the ear uniting to the cheek. He had a particular way, when pleased, of pursing up his mouth." We are told further that the future Iron Duke was very abstemious with wine, even in temper and that his highest ambition was to be a Major-General.

There are some gossip descriptions of English society leaders and some rather unpleasant tales concerning royalty. The age in which Eilers lived was not without its political intrigue, social scandals and bitter jealousies among those who yielded power, and the characters of some of the public personages of the day are shown to us in a somewhat different light than the average historian depicts them. [New York: D. Appleton & Co. Price \$3.00 net.]

It is a story of a decade and a half ago that F. Marion Crawford tells in "The Heart of Rome: A Tale of the Lost Water," and it has to do principally with the Palazzo Conti, the estate of an old and ruined family, which is lost through extravagance and mismanagement. It falls into the hands of a senator, one of the new rich, who forecloses a mortgage, and thus comes into possession of the property. Thither comes to reside a young archaeologist and socialist, who becomes the lover of the younger daughter of the unfortunate house, but there is an obstacle to their marriage which is fortunately removed in an unexpected manner. Incidentally there is much concerning the "lost water," which Mr. Crawford says really exists at many points under Rome, and that all that can be said of it with approximate certainty "is that it must run through long-forgotten conduits, that it rises here and there in wells, and that it is mostly uncontaminated by the river." There is no dark and gloomy mystery in this novel. It is extremely well written in an unlabeled style that makes the various developments seem real though they are pure invention. The actors in the various scenes are also imaginary, though they are perfect types of the people of the Italian capital of the present day. The old Princess Conti, with her pride of ancestry and her incompetency, is drawn with no little art, and she is admirably contrasted with the Baroness Volterra, the wife of a parvenu, but a great admirer of the old aristocracy. The heroine is an artless, straightforward girl who excites sympathy, not too well informed, perhaps, but a lady by instinct as well as by cultivation. Her simplicity is illustrated in her first meeting with the hero. "The Baron asked him questions about his discoveries, to which he gave rather short answers, but Sabrina gathered that he had found something extraordinary in Carthage. She did not know where Carthage was and did not like to ask, but she remembered that Marius had said there among some ruins." Mr. Crawford knows Rome so thoroughly in both its past and present that it appears to be no effort for him to picture the ancient city with all its traditions and memories as they are related to modern life, and he has succeeded in this book in constructing a story that is probable as well as picturesque. New York: [The Macmillan Company. Price, \$1.50.]

At a Lower Price.

We have arranged to have the Humphrey Poultry Book sent free to all of our readers who will drop a postal card asking for it. It isn't as big as an encyclopaedia and it doesn't pretend to tell everything about fowls, but it does contain a good many valuable pointers on feeding and brooding, which every one who owns chickens may ponder with profit. Of course it touches on the Humphrey products—the famous Humphrey Open-hopper Bone-cutter, the Humphrey Rapid Clover Cutter, the Humphrey Pure Air Brooder and other supplies which poultry raisers will find useful and profitable. Mr. Humphrey has an enviable reputation for fair dealing, and his goods are known far and wide as leaders in their classes. You ought to know about them. Send your name today to Humphrey Poultry Book Factory, Joliet, Ill.

On the Bone-cutter the Company has made a general reduction in price for this season.

Gems of Thought.

....The world is a kindergarten of little children, very little children, and the great God is trying to give them His great love and His great life.—Lyman Abbott.

....Little love is little righteousness; great love is great righteousness; perfect love is perfect righteousness.—St. Augustine.

....Dogs scent danger sooner than men, and their fidelity is more reliable.—"The King's Messenger."

....There are two powers at which men should never grumble—the weather and their wives.—Lord Beaconsfield.

....In a valiant suffering for others, not in a slothful making others suffer for us, did nobility ever lie. Every noble crown is, and on earth will ever be, a crown of thorns.—Carlyle.

....Aim at perfection in every thing, though in most things it is unattainable; however, they who aim at it and persevere will come much nearer to it than those whose laziness and despondency make them give it up as unattainable.—Chesterfield.

....You cannot paddle in sin and go with white feet before the throne of God.—Karadake, Count of Gersay.

....Patience has been described as the ballast of the soul, that will keep it from rolling and tumbling in the greatest storm.

....Let patience have her perfect work, and bring forth her celestial fruits. Trust to God to weave your threads into the great web, though the pattern shows it not yet.—George MacDonald.

...."Be amusing. Never tell unkind stories; above all, never tell long ones."

....I find it is bad practice to argue with neighbors over the yard fence; but it is a good thing to keep your chickens at home. They scratch and misbehave till neighbors complain. If they stray too much the neighbors claim them. I had three neighbors who fell out and did not speak for fourteen years over one gadabout old hen, and that hen was not worth killing. In fact, it would have been happiness in those houses and dollars in the pockets of the men if some boy had killed the old hen with his bean shooter. She got to paddling to one house, laid a few eggs and raised a big cackle, but before she got to setting she imagined that the other hens were pecking at her and left for another flock. Being of a suspicious, unsettled temperament, she was suspicious nowhere and running everywhere.—O. E. Moffet.

....It is impossible for those who are the slaves of low habits to entertain noble and generous sentiments. Their thoughts must always necessarily be similar to their ways.

Curious Facts.

—The St. Louis Medical Society is about to give a banquet in honor of three physicians of that city who have practiced medicine sixty-three years or more, at least fifty years of the time having been spent in St. Louis. The physicians thus to be honored are Dr. Simon Follick, who has practiced sixty-eight years; Dr. William Johnston, who has practiced sixty-five years, and Dr. William McPeckers, who has practiced sixty-three years.

—The new army rifle will pierce six human bodies or 14 feet of pine at six thousand feet. The use of such a cartridge in riots would endanger the lives of every person within 14 miles. For that reason the "riot charge" has been provided. It contains thirty-four grains of powder and two round balls weighing forty-two grains. Its fire is not effective at over six hundred feet.

—The selectmen of Brookline, Mass., are experimenting with a plan for destroying mosquitoes by means of music notes. The experiments are being made by the town bacteriological laboratory under superintendent Hythen. It has been discovered that a certain number of musical vibrations will cause mosquitoes to experience sudden and complete paralysis. Not only does this intensified note arrest the insect in flight but it will hurl it from ceiling or wall. Also, cause of a strange construction of the mosquito's auditory system it causes the insect to plunge unhesitatingly toward the spot whence the music starts.

—You put a lump of coal on the fire. It weighs a pound only, yet the amount of energy you let loose is positively alarming. An exceptionally powerful man can do half as much work as a horse for a brief period—not more than 24 minutes at a time. Imagine one hundred such men pulling with all their power at a rope until, at the end of 150 seconds, they fall back exhausted. That little lump of coal could do all that work, and continue it for another two minutes, if you could utilize all the heat it gives forth before it crumbles down into white ash.

—Successful experiments have been made in generating electricity to light railway trains by placing a fan on the front end of the locomotive. The pressure of the air revolves the fan and produces the power.

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—FOR—

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TELEPHONE NO. 3707 MAIN.

Robin had to go into the barn somewhat earlier than he probably expected.

Will the name of Mary J. Holmes usurp Old Sleuth now that the messengers are wearing petticoats?

We doubt if anybody went to sleep during the President's sermon. 'Twas a sermon, in fact, that might very well be served up cold during a good many succeeding Sundays.

And now it seems that the British government has overhauled Mr. Atkins for tobacco that at best was hardly worth the smoking. But how happens it that Mr. Kipling was apparently sleeping?

If Russia listens she may hear aesthetic little Japan out in the backyard and diligently shooting at a target. And aesthetic little Japan is nothing if not a determined body.

In union there is undoubtedly strength, but when two unions act as the warring factions down in Lynn are doing, the average citizen begins to remember that strength is sometimes another name for weakness.

In other days evangelists used to conclude their services with the formula "We will now pray." Mr. Dow seems to have found a new formula to which he attaches almost equal importance—"We will now attack the newspapers."

Maine still suffers from the careless sportsman; in fact, one sometimes wonders whether these autumnal huntmen are not impelled to childish gaudy by the influence of the woods and even led back to the past happiness of playing Indian.

Even despite the unpicturesque material which modern costume offers the artist, Chartran's picture of the signing of the peace protocol is doubtless well worth having. Nor is it impossible that future generations may find our costumes quaint even if not beautiful.

We learn from a contemporary that when the Cambridge school teachers received their pay the other day, "every pretty school teacher rejoiced." Does this mean that some of the teachers weren't paid after all? or is it merely an expression of the human tendency of beauty to be coquettish?

The North Pole as a sporting proposition ought easily to attract the necessary capital. The difficulty, of course, is that it couldn't be watched; but for that matter there are thousands of people who can't actually see the international yacht races, and who even have to take their pugilism by reading about it after the event.

The reported discovery of new sun spots by an astronomical observer of the age of fifteen suggests the possibility of a volume to be entitled, "Sharp-Eyed Sam, the Boy Astronomer," and promptly added to the dime libraries. In our youth we saw many of these volumes in the hands of others, but we do not remember any boy astronomer.

Without wishing to seem too critical, we nevertheless cannot feel quite convinced that the voting of the women of Wyoming is altogether responsible, as stated at a recent suffrage meeting, for the fact that there are now no women in her insane asylums. The point was not dwelt upon, but what it would actually seem to show is that the women of Wyoming are no longer crazy to vote.

The proposed effort to form a gigantic union of the team drivers has started with a statement singularly unattractive, although we regret to read that it was received even with applause. "There is only one way," President Shea is quoted as saying, "you have got to be in a trades union or in a hospital." Received with applause, indeed! Such a statement, by every person who has at heart the best interest of the labor unions, to say nothing of the best interest of the country, should have been received with hisses.

According to President Senter of the Vermont Bar Association, Shakspeare was no lawyer; and his use of legal phraseology, so often quoted to save his Bacon, one might say, was quite as often inaccurate as accurate. Potia, for example, was an amateur lawyer in more senses than one. President Senter's opinion will hardly find much credit among the Baconians, but it goes to substantiate the view of what might be called the Shakspeareans proper, namely, that Mr. Shakspeare had the genius of absorbing miscellaneous information.

The record which the Good Government Association proposes to keep of the good and bad deeds of every candidate for public office is a very practical method of affording the average citizen a chance to elect his representatives with the same degree of judgment that would be shown by a successful business man in choosing his own officials. Unless we are mistaken, the system is not altogether unlike the records kept by such a corporation as the Boston Elevated and used as a basis for promotions. If it works well in one place there is no reason why it shouldn't work well in another, provided that the average citizen will take advantage of an easy method of information. The fact that it is easy leaves little excuse for ignorance.

Manufacturers combine and raise prices, which means more profit to them at the expense of the consumers. Labor unions raise wages also at the expense of consumers. Farmers, as the great consuming class, pay the bills in the shape of more costly clothing, machinery and supplies, higher taxes, increased cost of buildings and repair work. This tendency increases and can only result in one way. Farmers will be forced to combine also and advance the price of staple products. The time is not yet quite ripe for a successful movement of this kind. But good beginnings have been made in some of the products more easily controlled, and which are in the hands of especially well-trained and enterprising growers. Without combination the prices of whatever farmers sell and also of whatever they buy are at the mercy of other people who combine closely and effectively.

The market reports and comment are one of the most practically valuable features of a well-conducted agricultural paper. There are times when a knowledge of conditions and tendencies prevailing in large market

centres might save a reader enough to pay subscription bills for a lifetime. A study of the market is essential not only for timely shipment and wise selling, but is also helpful to careful buyers. The statement of wholesale prices for all sorts of supplies bought by farmers serves as a protection against the abuses of local dealers, who can be brought to reason by a threat to resort to direct purchase from wholesalers. The markets are becoming more and more a subject for serious and careful attention by farmers of a businesslike turn of mind, who find that no other study so surely and quickly gets into connection with the farm pocketbook and bank account.

Although there is said to be nothing new under the sun, Le Matin, an enterprising French Journal, recently congratulated itself on having evolved a new variety of the prize serial story. In this case the prize was tangible. The serial mentioned a hidden treasure; the paper hid a similar treasure in Paris and invited its readers to hunt and find. The people hunted here, there and everywhere. But, unfortunately for the ultimate success of the scheme, the lucky winner found the treasure with quite too much facility to please others busily searching in the same neighborhood. They concluded, indeed, with that quickness for which the French mind is famous, that there was a person in the employ of the paper, who had been told where to find the treasure; and this being decided, that such a person was worthy of what the French lightly term the law of lynch. The prize winner, however, escaped with his life, and the disappointed treasure seekers were even prevented from wrecking the office of the paper.

Our Chinese Neighbors.

The first flurry of the unfortunate Chinese raid of three weeks ago has blown over, but that the better portion of our community wholly disapproves of the methods then used is proven by the resolutions passed last Monday by the Congregational ministers hereabouts. The words of this resolution, presented by Rev. Henry S. Huntington of Milton, are of interest in that they "protest against the method and spirit of the action as contrary to the essential principles of American rights and justice. No such treatment of Americans or of European foreigners resident among us would for a moment be tolerated," the ministers go on to say. "Moreover, the Chinese as a whole have proved themselves as orderly, industrious and law-abiding as any class of persons in America, and we claim that they should be treated with the same respect, good-will and regard for their rights which we demand for our own countrymen in China." Without attempting to analyze at all the motives which prompted the raid, it seems to us worth while, in view of the resolutions quoted, to review somewhat the status of the Chinese in our midst. Upon the "Sunday-school side" of this question we will not, however, enter. Plenty of people there are who say that the growth of the Chinese into Christian faith is wonderful and encouraging. And plenty of others assert that the Chinaman who goes to Sunday school regularly in the morning plays his gambling game on Harrison avenue quite as regularly in the afternoon. We desire to deal with statistics, for neither sentimentalism nor disparagement can influence them.

In a comparatively recent number of the Massachusetts Labor Bulletin there was published a careful article on the Chinese in Massachusetts. Here it was shown that, while in 1870 there was one Chinaman to each ten thousand of the population in our State, in 1900 there were eleven Chinamen to each ten thousand. The presence of these people in our community is, however, chiefly noticeable, not because of their number, which is very small, but because they retain, as few other foreign peoples do, their Oriental dress and their peculiar habits of living. This, of course, is largely our fault. A man seldom cares to be without a country, and by a United States statute passed May 9, 1882, it was provided that no Chinese could become a citizen of the United States by the usual procedure governing naturalization. Small wonder, then, that these Oriental neighbors of ours cling to the habits of the only land ready to welcome them. As would be supposed, the report goes on to show that the Chinese to the extent of eighty-five per cent. are employed in laundry work. Yet over six per cent. of these people in Massachusetts are merchants of one kind and another. And no less than fifty-four different occupations have been entered by them. Ten Chinese of the whole number here are found to be restaurant proprietors, and twelve are waiters in these same restaurants. Twenty-five are salesmen, twelve are cooks, ten are clerks, five are barbers and five are employed, even in Massachusetts, as housewives. It might here be interpolated, though the Labor Bulletin report does not, of course, pause to make the remark, that the Chinese give very good satisfaction wherever they are retained in this last-named capacity.

Concerning the ages of the Chinese in this State another interesting table of the report is to be seen. This developed the fact that very few of this race, as here represented, are over sixty years of age, and comparatively few under twenty. Thus the Chinese in Massachusetts are, ninety-five of them, "of productive age," by which is meant between the ages of twenty and sixty. The facility with which the Chinese acquire sufficient command of the English language to carry on business is remarkable. But this arises very largely, it is believed, from the fact that opportunities of primary education to all classes are widespread in China. Only a comparatively small proportion, therefore, of those who come to this country are unable to read and write in their own language. It seems to us particularly unfortunate that the raid, which our Congregational clergymen deplore, should have followed almost on the heels of the American-Chinese Treaty, which Secretary Hay has worked so hard to put through. By the signing of this treaty, it was felt throughout the country, both America and China should enter upon a new and more influential phase of existence. America, because the treaty marks the attainment of a new stage in the development of world-wide influence; China, because the treaty may mark the beginning of stability in her fiscal foundation.

That there are among the Chinese here, as at home, many men sincerely desirous of advancing the best interests of China we saw last spring, when a representative of the Chinese Empire Association came to Boston. Most of the civilized and leading Chinamen are members of this organization, the object of which is, broadly speaking, the enlightenment of the Chinese people, the broader education of her young men, and the ultimate establishment in China of a liberal form of government. Railroads will ere long be constructed, mills and factories established, gold and other mines

opened up to the people of China if the ambitions of this reform movement, a branch of which is located on our own Harrison avenue, are realized. In all this upward struggle China asks our help and encouragement. We as a civilized people, should blush to indulge in violence where friendliness is invited.

Tramps and Recent Child Labor Legislation.

The latest charge brought against child labor by those who have studied the question is that of pauperism. Miss Jane Addams of Hull House, Chicago, writing in "Charities," a New York weekly review of general philanthropy, points out that child labor has a decidedly debilitating effect upon the mental and physical systems, and so drives men to tramp life. From examination of the tramps in Chicago it has been discovered that a genuine connection may be established between premature labor and worn-out men. "It is surprising," writes Miss Addams, "to find how many begin to tramp because they are tired to death, just as a business man goes to the woods because he is worn out with the stress of business life. This inordinate desire to get away from work seems to be connected with the fact that the men have started to work very early, before they had the physique to stand up to it, or the mental vigor with which to overcome its difficulties, or the moral stamina which makes a man stick to his work whether he likes it or not." We cannot demand any of these things from a growing boy. They are all traits of the adult. A boy is naturally restless, his determination easily breaks down and he runs away.

Miss Addams goes on to illustrate by means of a man in the municipal lodging-house of Chicago, who had begun to work in a textile mill quite below the present legal age in New England, and who had worked hard for sixteen years in a place that required no mental exercise, but made him simply a cog in an industrial wheel. "At last," said this man, "I was sick in bed for two or three days with a fever, and when I awoke I felt as if I were going to die. I would rather go to hell than go back to that mill." This man does not starve. Miss Addams says, but for four years now he has been tramping. The mere suggestion of a factory throws him into a panic. The physician has made a diagnosis of general debility. The man, in his opinion, is not fit for steady work because prematurely spent. All this makes it very clear that the young, if too early submitted to the grind of factory life, must swell our pauper list. In New York, it is worth noting, a law just enacted provides that children who are less than sixteen years of age shall not work longer than nine hours a day. The factory inspector has discovered that boys and girls fresh from a school life involving only five hours a day of indoor work are peculiarly unable to bear, without injury, the strain of the ten-hour work day in our factories.

Disregard for the provisions of this new law is to be punished by fines. No longer will the factory inspection department be satisfied with the dismissal of the children under the required legal age. Real evidence that the child is as old as the law requires should be demanded by the employer when the child is taken on; then if he fails to have this to show he must pay the penalty. President Roosevelt has written to Mr. Hall, the secretary of the child labor committee which secured the adoption of the new code, heartily congratulating him upon the success of the agitation, and declaring that "we now have in New York State child labor laws which I believe will be enforced." Boston's position in this matter of child labor has been made quite clear this last week in connection with the Western Union Telegraph Company's employment of girls as messengers. A complaint was made that the company was violating the labor laws by employing girls of less than the legal age to carry its messages. But it was found upon investigation that none of the messengers were less than sixteen years of age. Nevertheless, a technical violation of the law was brought to light, for all girls less than twenty-one must present a regular school certificate that they are eligible for work, and this some of the messengers had failed to do. Yet when the manager's attention was called to the matter he acceded very readily to the requirements. All this is of decided interest, the agitation concerning child labor, the laws which are passed to regulate it and the action which grows out of the laws. America owes it to herself to stand for the protection of the child. And that employers, no less than philanthropists, are bending their efforts to guarantee to every boy and girl in the land a proper amount of childhood and education, is a most encouraging sign of the times.

Relief for the Rich.

A proper appreciation of the burdens of the rich is rarely to be met with. We are accustomed to think of the serious problems which beset the poor, and we are taught from earliest infancy to sympathize with them. But because we come to think in this country that wealth is a panacea for all human ills, it seldom occurs to us that the rich man, too, needs our sympathy. There is in the first place the constant demands that are presented to him for help of all kinds. Some of these he can escape, but many of them dog his footsteps night and day and make life a real burden. Like the kings of old he learns, too, that there are in the world thousands of people who will fawn and flatter him just because he is rich. And he is not sure whether he owns even the great gift of life—love and friendship,—to the fact that he is himself, or to the accident that he is the possessor of vast wealth.

All along the road, too, he is bowed down with the problem of how best to husband his wealth. Sudden reversals of fortune come to many men, and he can never feel himself immune from the possibility of such losses. Above all, there is confronting him at every hour the question, "Whom shall I make my executor or trustee?" If provision is to be made, as it should where such heirs exist,—for children or grandchildren, a long tenure of trusteeship is eminently desirable, and if any or all the funds is to be given to a charity, a permanent trust is to be solved to the growers' liking.

This problem of who shall attend to the trusts of the rich was very interestingly answered in San Francisco the other day by Lyman J. Gage, former Secretary of the Treasury. Mr. Gage put himself on record as advocating enthusiastically the employment of trust companies for these offices. "Enjoying perpetuity such a company is not subject to the vicissitudes of death," he pointed out, "and, because controlled by the limitations and provisions of its charter, it is kept by the strong hand of the law within the limits of conservative operations. Presumably managed by a competent board of directors the beneficiaries of the trust have the advantage of the collective wisdom of the experienced

man, and in financial matters in a multitude of experienced counselors there is safety." A further advantage, of course, Mr. Gage held to be the inspection by State officers of such companies and the guarantee their ample capital gives of loss through errors of judgment or willful dishonesty.

Mr. Gage's address, because given as a financial expert and quite independent of any company whatever, is of exceeding interest not only to the "rich," but to those of moderate fortune.

Save Park-Street Church.

When Boston was Boston and not a great metropolis, we had many ancient structures that added to her beauty and individuality, and many of these have been swept away by "ruthless commercial and insatiable trade," and the few remaining ones that tell of the past are threatened with destruction by a severely practical age that erects skyscrapers, suggestive of the Tower of Babel, as monuments to its aspiring enterprise.

This era would wipe out many of the charms that gave Boston its original distinction in the days of Holmes and Hawthorne, and gives us something in its place that has little architectural, poetic and historic value. Boston has many fine artistic modern buildings, but they lack age and association, and when an edifice is beautiful and is a source of attraction to visitors from abroad, why should it be torn down to make way for a gigantic bee-hive, the counterpart of which can be found on nearly every business street, contributing to the dismal uniformity of many bustling localities.

These thoughts were suggested by the reception of the handsome illustrated pamphlet just issued by the Committee for the Preservation of Park-street Church, setting forth good and sufficient reasons why the time-honored temple should not go the way of regretted buildings that we can only recall in memory or in illustrations preserved through patriotic pride. There ought to be public spirit enough in Boston to make the destruction of Park-street Church impossible.

Supply and Surplus.

The main difficulty with the present arrangement limiting the Boston milk supply is that it is based on receipts during the corresponding months of last year. There was a shortage all winter owing to the hay famine and the disturbance caused by the cattle epidemic. This year the supply is nearer the normal. To limit the supply as proposed, would mean a heavy charge back for surplus in the case of the average shipper.

It looks as if the astute contractors have in this important detail of the contract obtained a temporary advantage over the officials of the union. The agreement at the last was a hastily prepared document and was not sufficiently considered nor worked out in detail. The services of a first-class lawyer, well informed in the mazes of the milk trade, should be secured for these occasions, and the contract placed in such shape that all parties concerned may have no excuse for misunderstanding or artful dodging. Its terms should be so definite and complete that a stranger coming to Boston could, after reading the contract, form a good idea of the conditions on which the milk is sold.

Another fundamental need is that an official report of the amount of milk received at Boston shall be available to the producers. At present none except the contractors can tell the amount, and these refuse to make the figures public. This condition is plainly unbusinesslike, since the actual average price paid may depend considerably upon the amount shipped if the first limit is exceeded. The milk receipts should be officially registered at the Chamber of Commerce or otherwise, as is done in the case of butter, eggs, hay and other produce. Then the producers would be able to judge something of the real condition of supply and demand, and would be in a position to act accordingly. At present the contractors have a distinct advantage in being able to find out at any time the real state of the market, while the producers can only guess from general appearances.

The whole business must eventually be carried on open and above board, and nobody misled or blinded for lack of the hidden facts. Another strike may be needed before prices and conditions are placed on a reasonable basis.

Hay Prices About Steady.

Supplies have been increasing enough to about counteract the previous temporary shortage, and prices are about at their former level. Large shipments have been reaching the Eastern markets from Canada, Ohio, Michigan and western New York. It is said that a single station in Kansas will send out three thousand carloads this season. Whether the price will go lower is a question. Some dealers think the general level has about been reached. Rye straw is evidently very scarce, and prices have gone so high that many former buyers are looking for cheaper substitutes. This condition may improve the market for other bedding material. It is reported that but little hay will come from Quebec province this year on account of the strong home market at Montreal. In that event the Boston and New York markets would be considerably strengthened.

The following table shows the highest prices for hay quoted by the Hay Trade Journal in the markets mentioned at this date: Boston \$18.50, New York \$19, Brooklyn \$19, Jersey City \$19, Philadelphia \$16, Pittsburgh \$14, Minneapolis \$11, Chicago \$12.50, Richmond \$14.50, Cincinnati \$13.50, Nashville \$14, Kansas City \$9, St. Louis \$12.50, Montreal \$10, Memphis \$14, Providence \$19, Buffalo \$14.50, Washington \$15.50.

Cranberry Prices Well Sustained.

The situation continues favorable to sellers. An active demand has taken care of the large receipts and prices for best grades are more than maintained. The New Jersey berries instead of depressing the market have themselves advanced to a strong position, and it looks now as if the cranberry would be solved to the growers' liking. The situation is considerably strengthened by the scarcity in this country and in Europe of small fruits during the whole season. A. M. Banks' Sons of New York are now shipping about five hundred to six hundred crates of cranberries to London each week. The Britishers are cultivating a taste for cranberries. It took a great many years for them to learn that the cranberry was a palatable fruit, but the beginning of a good trade is now under way. At New York the supplies from Jersey bogs are holding on better than first supposed. Cape Cod crop shows the largest percent of perfect berries. Early blacks have many culls, but when sorted show a

decided improvement in the average quality over last week. Heavy orders are being negotiated for the Thanksgiving trade, which shows plenty of berries in sight. Highest price is \$8.50, against a top quotation of \$8 in Boston.

By an examination of the price lists of the New York market from 1870 to 1902 it is found that the prices of cranberries have varied widely in that time. The lowest ranges of prices quoted were in April, 1879, when the berries sold at \$3.50 to \$4 a barrel; November, 1880, \$4 to \$7.50; April, 1889, \$5.50 to \$5.50; November, 1890, and January, 1897, \$5 to \$5.50; April, 1897, \$3.50 to \$5. By contrast the present prices seem quite liberal, and so they are for thus early in the season.

The Market Fall of Apples.

"The trouble with the market," said one salesman, "is that the growers are sending in a lot of windfalls and rubbish that sells hard and hurts the sale of good apples." There is certainly a large amount of second-class fruit, but good apples are also becoming more plenty every week, and dealers find more and more difficulty in making prompt sales at ruling quotations. Prices, however, are still supported by the foreign markets, which are holding up in a wonderful way, owing to the scarcity of native fruit all over Europe. Quotations in Boston for good Baldwins and Greenings are still \$2 to \$2.50, and a common sale price is \$2.25. But there is an oversupply of seconds which are ranging a little below last week's figures, selling at \$1.25 per barrel, or \$1.50 is pretty good. Apples arriving in bulk from West or South are usually mixed quality and in poor condition. They bring about the same as seconds, but no barrel is furnished.

Barrels seem to be in fair supply in the apple districts of southern New England, the crop being a light one. But Maine farmers and the same is true in New York State and Canada—are finding it extremely difficult to secure barrels in which to pack their product. According to the testimony of one person, who has been visiting in Maine, some of the apple growers are obliged to send ten and fifteen miles for barrels, and then carry back one manufactured of wood almost in its green state, correspondingly heavy. Everybody about the places is pressed into the service of picking, labor being scarce.

The New York market for apples is this week in rather better shape than Boston. Receipts are heavy, but many of the best lots are picked up for export or sent across by the growers themselves. Choice eating varieties quote fully up to last week, while the common varieties and second grades are selling slowly, and quotations are barely sustained. A great deal of rather poor stuff has been coming in from the Hudson-river district and selling at \$1.25 to \$1.75. Better stock comes from western New York, and brings \$2 to \$2.50 for good fruit of standard kinds. On account of the scarcity of barrels a good many arrive without heads, and some come in boxes of all sizes. Packing in such way, of course, hurts the price seriously. There are still a good many apples around New York State shipping points, and big shipments to be made from Pennsylvania, Michigan and Canada. A New York dealer lately returned from the Annapolis valley, Nova Scotia, says the crop for that region will be five hundred thousand bushels, but many of these have been shipped. Another buyer just from the Virginia apple section says the crop is large but the wind caused much damage. Many growers in Pennsylvania, New York and New Jersey, who have not sold, are holding for \$2 at their shipping station, but some sales are reported at \$1.75, conditions not stated.

The president of the Apple Shippers Association, C. H. Weaver of Chicago, asserts that most of the winter apples arriving there are going into storage, and that they are not coming as freely as a year ago. The fall varieties from New York and Michigan are cleaning up rapidly, and some of them are going into cold storage. Receipts of bulk apples are heavy on account of the scarcity of barrels. The apple crop in southern Iowa, he says, is fair, but the crops of Missouri and Kansas were practically failures. Some California, Colorado, Washington and Idaho apples are coming to Chicago, but the high rates of freight make it unprofitable to handle many of them. This freight handicap will probably save Eastern growers from competition with a considerable portion of the apple crop, which, although large, is so located that it can reach the best markets only at great expense.

Among the Farmers.

I have got the best results when seeding alone, sowing the last week in August or the first of September. The next best with wheat. I like to get the land in as good condition as possible by cultivating it thoroughly.—Seaman Mead, Greenwich, Ct.

In my experience the best way to keep good help is by paying good wages and furnishing tenements and vegetables to married men. The single man boarded in the family is not good help generally speaking. The married man is "fixed," and must be contented if well-used.—F. W. Sargent, Essex County, Mass.

Compared with other foods we consider green bone the cheapest for the results accruing from its use of any one food, nearly doubling (as it does) the amount of eggs, and very materially increasing their fertility, besides producing better plumage and maintaining a more healthful condition of the fowls so fed.—A. C. Pickering, Wisconsin.

As long as the farmers of Aroostook County can get one hundred dollars per acre out of potatoes, they will not give dairying that close, careful attention it requires in order to make it a success.—E. E. Parkhurst, Aroostook County, Me.

No farmer who is giving his business proper attention can overlook the importance of the silo.—A. W. Gilman, Kennebec County, Me.

What will become of the farmers of New England that trusts and Western competition have impoverished? If the farmers could strike once, there would be such a howling among the heathen as never was known before.—E. Robertson, Massachusetts.

Care of Clothes.

For taking spots out of cloth it is best to have at hand the necessary materials, as it is much easier to remove spots when they are new than when they become old and dry. Benzine, gasoline and naphtha are all good. A little piece of plain white flannel or some very fast dye cloth is best to apply this with, or in the absence of this you might use an old sponge.

The care of gloves may be best subserved by the observance of a few simple rules, says Haberdasher. "Keep them in tissue paper. Don't pull them out of shape. It is no test of quality and spoils their beauty."

Glove powder freely used is the price of a pair of gloves in many cases. A perspiring hand forced into a dry glove—usually one or two sizes too small—will usually come out the least injured, and the blame will be unfair as the treatment.

If you send your clothes out to be done up be sure that you select a hand laundry. Machine work and acids make short work of fine clothes. Shirts, collars and cuffs should be done up without gloss. Insist on the domestic finish. Have your poke and wing collars ironed flat, not curled.

All clothing should be carefully hung up, and if you will study your closet and use the modern appliances, which are easily procured, you can keep a great deal of clothing in good condition in a very small space. The cheap twisted-wire coat racks are good enough. On these put the waistcoat, and then over the waistcoat put the coat. There are also patent trouser hangers, which keep the trousers pressed in shape, but it is much easier to fold your trousers properly and lay them in the bottom of your closet or in a long drawer.

A piece of paper should be put between each pair of trousers, and it will not hurt them if they have to be folded once. In light-weight suitings, such as homespuns and flannels, it is much better to lay the trousers out flat in a drawer than to hang them up. All clothing should be carefully brushed and kept as free from dust as possible.

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The Horse.

Autumn Colts.

Some men have a horror of having a colt come in cold weather. I don't think the weather has so much to do with the poor stunted colts as the feed. Where these stunted colts are found you will find the small dish with a small quantity of grain in it. The farmer concludes the mare has nothing to do all winter but just suckle that colt, and consequently does not need much grain. Here let me give the new beginner a word of warning. Be sparing of the oats for the first ten days after foaling. After the colt is an hour or two old give the mare a nice warm bran mash, say, one gallon of bran, and for one week after that give no grain of any kind. Then try one pint twice a day and gradually increase the ration so that when the colt is two and a half weeks old the mare will be at full feed. But to go back to the small dish with the small quantity. To my mind the proper measure to go by is the capacity of the stomach. By carefully watching your animal you will find out what amount it will do best on, and that is the best measure obtainable. Good hay and oats are not all that is required for the mare and foal. A bin of crushed oats, with an equal part of bran, should be the mainstay while the colt is sucking, and it should be fed four or five times a day. When the foal is four or five weeks old a box should be placed in the stall with the mare, but out of her reach and on a level with the colt's breast, into which a handful of dry oats can be thrown. The colt will soon begin to nibble at them. When fairly started to eat, a little bran may be added, and as the colt grows older, say, at two months old, substitute crushed oats for whole ones. I will leave the foal eating crushed oats and bran at two months old, and will tell of future treatment at another time.—T. E.

Dan Patch's Fast Mile.

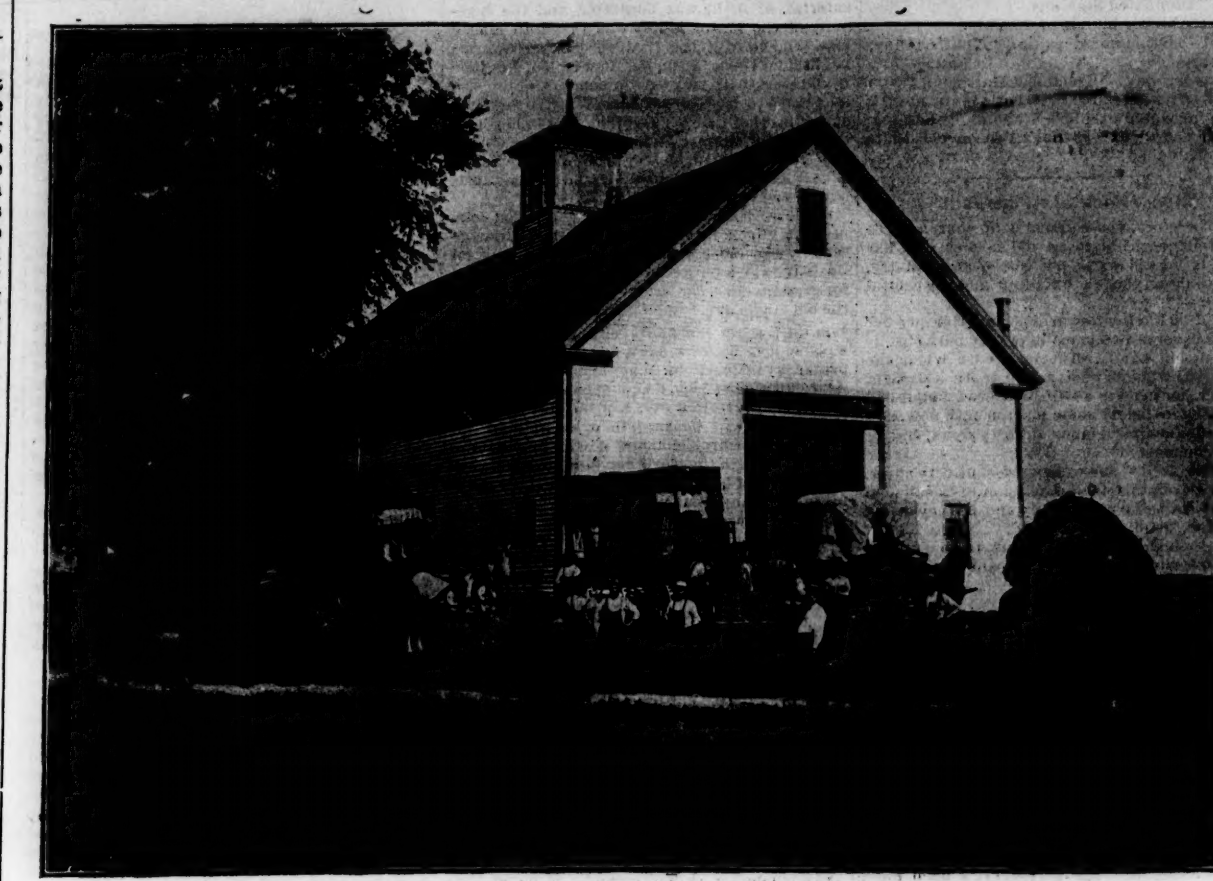
The world's pacing records were smashed at Memphis Tenn., Oct. 22, when Dan Patch, king of pacers, did a mile in 1.562. The first half was made in .58, but even the most enthusiastic admirers of Dan Patch never dreamed that he would approximate this speed for the entire mile. They watched him intently as he tore around the third turn, thinking that he would soon show signs of distress, but there was nothing of the sort to be seen, the stallion's stroke being as true and free as when he left the wire. The time at the three-quarters was 1.274, the third quarter having been paced in .29 seconds, showing wonderful rating on the part of the pacemaker, and also that Dan had a lion's heart to stand the work out for him.

As the flying trio turned into the home stretch it was plain that the record would be materially lowered, but no one expected the final quarter to be done in twenty-nine seconds. But it was, the crowd cheering in mighty volume with every stride the pacer made, and although Dan tired in the last fifty yards, there was never a suggestion that he wanted to break, and his feet were all under him when the wire was reached.

Then the cheering was renewed, and it continued until long after the horse had jogged back to the stand and McHenry had received the congratulations of hundreds of men who rushed out on the stretch to shake his hand. There was never a question about the correctness of the record, hundreds of watches held by experienced timers in the audience making the mile as fast or a little faster than did the official timers. C. W. Marks of Chicago, who presided in the timers' stand, furnished the mile by eighths as follows: .142, .29, .432, .58, 1.124, 1.274, 1.424, 1.562.

Work More Horses.

A farmer living in Trumbull County, O., asks whether or not a riding gang plow, turning two furrows at once, would be a success on their heavy clay land. If it would be, could four 1100-pound horses draw it? And can a good work be done with gang plows as with single ones? If a gang plow can be used successfully he thinks it would be quite a saving of high-priced labor. "Well, this friend is thinking in the right direction," replies T. E. Terry through the Practical Farmer. "Labor is high at present. We cannot change this fact; however, we can study to make the labor of men more effective. But one cannot answer the above question positively. Much depends on the size of the fields and their condition. A Western farmer often drives from four to six horses, using a gang plow, and sometimes a harrow hitched behind a roller. Their tools are generally well arranged for using a good deal of horse power. But their fields are large and free from obstructions. There is much flat land in Trumbull County and doubtless many farms with fields large enough so a gang plow would be all right. It would be an unwise investment on our little farm, with its necessarily small fields. As to the work done, there is a difference of opinion. I am inclined to think that a single walking plow, in good hands, does as near perfect work as can be done. However, it is not fast enough for some circumstances, and I have seen thousands of acres well plowed with Western gang plows. And the amount of land that friends there tell of turning in a day seems almost incredible. In the far East I have sometimes seen two men plowing with one team, one driving, the other holding the plow and turning one furrow at a time. They would do well if they plowed one-third as much land in a day as one live Western man would, driving three or four horses. If the land is in good condition, well supplied with humus, so it is not over hard and is free from obstructions, I do not know why a gang plow will not work as well in Ohio as in the Northwest. If two horses can draw a walking plow turning one furrow, it should not be much harder for four horses of the same size to draw two plows, even if the driver rides. But if friends in the East stick to the walking plow, turning one furrow, from choice or necessity, there is no reason why they cannot often drive three horses abreast when harrowing, and thus gain a little using wider harrows. Or, perhaps, they can use the same harrow and go along faster. And three horses abreast make a strong team to draw crops to market. Many a day the writer has helped himself in this way. The third horse practically draws all load, you see, as an ordinary two-horse wagon is usually strong enough to carry a three-horse load. When three thousand pounds was load enough for two horses, I drew five thousand with three horses, week after week. In round numbers, say, the wagon weighed one thousand pounds. With three thousand of load, each one of two horses had two thousand to draw. With five thousand of load, each one of three had the same to draw. You see I could draw almost twice as much in a day



A MARKET GARDENER'S BUSY DAY.
See descriptive article.

with three horses as I could with two. In many cases a farmer can help himself quite a little, now labor is so high, by arranging to drive more horses. If a man can earn \$5 a day for you with three horses, and only \$3 with two horses, can't you see that you can make the use of a third horse enable you to pay more for labor and still make more? This matter is worth working into carefully. We must learn to make our labor more effective on the farm, same as men do in other lines of business. Growing at present conditions will not help us out; study will.

The Farm Horse in November.

Some farmers imagine that after the letup in fall work, almost anything is good enough to keep the horse up till the spring work begins. When that begins they begin to feed on oats. Naturally the horses, which have probably been existing on poor hay, only up to the time the work begins, fall at the end of half a day's work. To pick them up they are then crammed with oats, with the usual result—"a colic," and perhaps a dead horse. If a horse's strength is allowed to run down it cannot possibly be picked up again by over-feeding, and if a horse which is not used to oats is suddenly given a liberal allowance it is nearly certain to give a colic. It is much better to try and find some work for the animal to do all through the winter and keep a fair supply of oats going to him, so as to keep up his muscle. The animal will then be able and willing to perform whatever reasonable work he is asked to do in a satisfactory way. We have often asked veterinary surgeons why the mortality in spring was so high; they always reply, injudicious feeding. A horse will do very well on oats and oat straw—if hay is scarce—but we do not advise giving barley straw to a horse, as it is very liable to give acute indigestion, followed by colic. A horse, for its size, has a very small stomach. It should, therefore, be fed often, and not too much at a time. For this reason care should be taken to supply food three times a day.

Notes from Washington, D. C.

The goat industry of the United States is the subject of a pamphlet about to be issued by the Department of Agriculture, compiled by George F. Thompson, editor of the Bureau of Animal Industry. The census of 1900 shows a total of a little less than two million animals, largely found in the Southern States. Not all kinds of goats skins, the circular says, are in demand for leather. The pelt of the Angora is, as a rule, too thin and poor for leather; the longer the hair of the goat, the thinner and poorer the pelt. This applies to goats not Angoras. Among the French mountaineers the raising of kids for their skins is a leading industry. As soon as the kids are old enough to eat grass and other such diet, the skin begins to grow coarser and harder. The kid is, therefore, penned, not on a prevent its eating improper food, but to prevent scratching and bruising. The conditions in the United States, it is stated, especially as regards the item of labor, are so unlike those of mountainous France, that it is not probable that a similar industry could be maintained here. We import from \$20,000,000 to \$25,000,000 worth of goat skins annually, mostly for shoes and gloves.

The bulletin discusses the question as to whether it will pay farmers to raise common goats for the sale of kids, whose meat is as palatable as that of lambs, and is, in fact, sold in every large city as lamb's meat. If a ready market were established for kids at, say, \$1.50 each, and if one many goats can raise three kids annually, it can hardly be doubted that the industry could be made profitable.

The bulletin points out that there are vast acreages in this country suitable for goat raising where perhaps no other animals would thrive. The feed that goats prefer is browse, with a small proportion of weeds and grass; therefore lands burdened with brushwood and briars are particularly desirable. The pronounced characteristic of Angora goats for destroying brushwood, briars, weeds, etc., has been exploited so extensively that many people have received the impression that this was a trait peculiar to the Angora breed. This is not the fact; the predilection of goats for such a diet is common to all breeds alike. Brush ridden land is usually rich, but to clear it by ordinary methods requires an expenditure varying from \$5 to \$40 per acre. If goats can do this work as thoroughly, why not employ them, even leaving out the question of their own profitability? The bulletin avers that a little investigation will probably convince the farmer that the common goat is not so promising of profit as the Angora. The latter produces a fleece for which there is a good demand at good prices, while the common goat contributes nothing of this kind. Its flesh is much more palatable than that of the common breed, and it is less inclined to jump or climb. On the other hand, the value of the skins probably is less, and the Angora goat usually has but one kid a year, while the common goats have two and often three. At this time there is a ready sale for Angoras, while it can hardly be said that there is a market for the common breed.

The talk of a congressional investigation of the Agricultural Department is likely to result in nothing more. Representative Wardsworth of New York, chairman of the House committee on agriculture, has been looking into the question of the trouble about seed contracts, and does not feel that there is anything to warrant an investigation. He expresses himself as satisfied that Secretary Wilson is taking good care of the interests of the Government in his department.

Experiments under the direction of the Department of Agriculture have shown that the tubercular bacilli produce consumption incorporated in cheese made from milk containing them, are killed by the ripening process of the cheese. It is found that the microbes in the cheese remain active for three months, but are dead in cheese which has been curing for a longer period.

Viewing the fact that the beef trust controls the country's meat supply, that cereal food products are principally produced in a few Eastern cities, and that sugar is controlled by a trust, the Department of Agriculture has been experimenting with a diet of fruits and nuts, the nuts supplying the fat deficiency of fruits. The results of the experiments made on two women, two children, two elderly men and two college men emphasize the fact that both fruits and nuts should be considered as staple foods rather than food accessories. According to the experiments, nuts are the cheapest source of energy to be combined with fruits, and peanuts range far ahead of any other species.

Chile controls the supplies of nitrate of soda of the world. This important fertilizer, furnishing the cheapest form of nitrogen for the farm and orchard, is produced in commercial quantities only in Chile and Peru. The production from these deposits in 1902 amounted to nearly three billion pounds, and for that year the exportation to the United States was forty million pounds greater than in 1901. Nitrate beds have recently been discovered in California, which possibly may become a source of considerable production.

Hens cannot lay two perfect eggs in one day, because the hen's body is not capable of releasing sufficient carbonate of lime to furnish two perfect shells. The first growth of the egg in the hen is the yolk. When this reaches maturity it drops into a long, membranous canal, known as the oviduct. As it travels through this canal it receives coatings of albumen, which is the white of the egg; as it approaches the mouth of the oviduct it receives a coating of lime, which constitutes the shell. With a full laying hen this operation occurs only every twenty-four hours. Once in a while, however, due probably to stimulation and over-feeding, the ova, or yolks, are produced so rapidly that two of them drop into the oviduct together; these ova travel together along the passage and receive the white separately, but become enclosed in one shell, and when laid are commonly known as double-yolked eggs. Such an egg is in reality a double egg, the white being duplicated as well as the yolk. These eggs are seldom set or hatched, but should they be fertile and hatch, the occasional four-legged or other chicken monstrosity would be the result.

The writer has tried hogs in the orchard and found results highly satisfactory, both to the orchard and hogs. The orchard improves with hog culture; by the snout many codlin moths find a hogish grave and the soil is enriched. Hogs, unlike cattle, do not trouble the lower branches of the trees. It becomes quite unnecessary to pick up windfalls; they are, as it were, caught on the fly. As far as the hogs are concerned they will thrive on liberal rations. A comparatively small amount of sugar will kill a hog, but he will assimilate quantities of acid and grow fat upon it. GUY E. MITCHELL.

Milk for Boston.

The Boston milk situation may yet be settled without resort to extreme measures. Producers have made distinct concessions, and it is now the contractors' turn. Their present position can hardly be maintained. Refusal to arbitrate already places them on the wrong side of public opinion. To in-

slat on limiting the shipments at last winter's short supply would appear still more unfair, both to the public, who do not wish a milk shortage, and to the producers who wish to sell all their milk.

Not to appear wholly in the wrong, the contractors must evidently make concessions. Both parties having agreed, at least temporarily, on the flat price of 37¢ cents, the concessions would naturally come in the shape of increasing the limit of fully paid shipments to a more liberal basis. This is apparently the main hope for peace. Certainly the farmers will not willingly long continue an arrangement which sells a large part of their present output at lowest factory prices. Either they would reduce their output and thus make a shortage that would probably bring the contractors to terms, or they would strike at once, holding back all milk until fair conditions are offered.

Of course the contractors will fight hard to retain enough of the surplus cheese to serve as an entering wedge in future agreements. The discount for surplus is their main reliance for whitening down the real price to a fine point, while apparently paying according to schedule. To cut away the surplus clause would lop off a splendid dividend paying branch of the contract. To reform the zone system would stop another source of indefinite income. With both these features set right, the contractors might find some trouble in avoiding payment for milk at the full price, and farmers when shipping milk would be able to reckon somewhere near what the net returns would be.

All this may not come about in one year, but progress has been made at a good pace the last four or five years, and especially the last two years. Producers, moreover, have about reached a stage of organization which justifies a trial of co-operative shipment and disposal in case of extreme obstinacy on the contractors' part.

The union needs more men and more money. Its officers have no power except as the producers stand behind them. Control of the bulk of the milk supply is the first essential, and this has been fairly well effected so far as can be judged in advance. Money enough to pay needed expenses and to form a good-sized reserve for emergencies is the second essential, and the present crisis is the favorable time for local unions to canvass actively both for members and money. There is no apparent excuse for withholding support from the official heads of the union. Secretary Hunter, the only paid executive, is putting a great deal of time into the work, and he represents the best ability at the command of the association. The directors are beyond doubt to a man worthy of entire confidence. They have to deal with some of the shrewdest, ablest of Boston business men representing the contractors; a compact, unified body of men, with plenty of money and long experience in conducting these milk campaigns. Under the circumstances the union directors could not be expected to carry everything their own way. But nobody acquainted with the details of the affair doubts but that they have been doing their best. They should be loyally supported during the pending contest.

The speedy settlement of the matter depends upon the readiness of the contractors to come to terms, the first of November being the limit maintained for settlement of the dispute. Judging from the past, the dealers will put off the decision as long as possible. They should be brought to the point at once, in order to give the shippers ample time to take whatever action may be required.

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